II. Remarks

Claims 1-8, 10-14, 16-19 have been amended and claims 9, 15 have been cancelled. in order to further the prosecution of the present application. Applicant reserves the right without prejudice to prosecute the subject matter of the originally filed claims 1-19 in subsequent continuation application(s). No new claims have been added.

The Examiner has rejected Claims 1-19 under 35 U.S.C. 103(a) as being obvious under United States Patent No. 6,324,648 issued to Grantges ("Grantges") in combination with United States Patent No. 6,085,227 issued to Edlund et al ("Edlund"). Applicant responds to this rejection as per the discussion below.

In summary, in view of the below discussion, Applicant can find no motivation other than what is disclosed in Grantges for having a firewall within Edlund and in that case, the proposed combination would not teach placing a firewall between the proxy server and the polling server of Edlund. Even if one ignored the motivation provided and placed the firewall of Grantges between the servers 104 of Edlund (something Applicant believes is their claimed invention and is not supported by anything other than impermissible hindsight), the proposed combination is not supportable by the teachings of Grantges and Edlund. Further, if such lack of support is ignored then the proposed combination still would not work as (the polling operation) originally intended by Edlund.

Grantges' Teachings

As mentioned in Applicant's earlier response (filed on May 4, 2005), Applicant is of the understanding that Grantges teaches a system which provides authenticated access (through a secure connection) from a client computer over an insecure, public network to one of a plurality of authorized applications hosted by destination servers on a private, secure network. This authorized access is done through use of a client-side digital certificate. Grantges further teaches a firewall

disposed between the insecure, public network and the private network (Abstract; Column 5, lines 40-43), where Applicant emphasizes for the following discussion that the public network is deemed "outside" the firewall and the private network is deemed "inside" the firewall. Grantges further teaches that a proxy server outside the firewall intercepts messages from the client computer destined for the destination servers, and forwards the intercepted messages through the firewall to a gateway server associated with the destination servers. Grantges also teaches that the proxy server receives messages from the gateway server containing application data sent from the authorized applications via the secure connection for receipt by the requesting client computer. Applicant emphasizes that the data in the messages is sent through the firewall, from inside to outside the firewall. In general, Grantges teaches the proxy server actively routes and forwards/receives messages through the firewall in real-time by the creation of the active two-directional ports (e.g. connections 54 and 56).

Accordingly, in view of the above, Applicant respectfully submits that the correct interpretation of Grantges' teachings is a secure connection is set up between the proxy server and the application gateway server, such that the secure connection is initiated when the proxy server sends a request through the firewall for connection to the application gateway server, and then a subsequent handshake communication occurs between the proxy server and the gateway server. This handshake involves the exchange and authentication of each server's digital certificate followed by a setup of the secure connection in response to the authorization (see Figures 1 and 2). Also, as mentioned in Applicant's response filed on May 4, 2005, the secure connections and data communication thereon described by Grantges are initiated and established by the client computer (column 8 lines 16-28 and lines 47-53) from outside the firewall and not through any internally initiated actions from inside the firewall by the application gateway server.

In view of the above, Applicant is confused by the Examiner's statement that the step of the "polling server being configured for polling the proxy server to pull the received data across the firewall" is disclosed in Figure 1 of Grantges. Applicant has found no mention within Grantges of a

polling operation across the firewall by the application gateway server in order to retrieve data from the proxy server outside the firewall. Applicant invites the Examiner to provide further details as to why Figure 1 of Grantges, taken in context of the whole disclosure of Grantges, purports to adequately describe polling operations for data retrieval.

Edlund's Teachings

The Applicant has further reviewed the specification of Edlund and the following observations are noted. Edlund teaches a method and system for operating remote devices in real-time, specifically scientific instruments such as a tunneling microscope, over the Internet. It should also be noted that Edlund discloses a system that allows "any user on the Internet, who has sufficient access privileges, to execute commands on a remote device in real-time" (Col. 1, lines 37-39), and more specifically Edlund provides "real-time access to remote devices, such as scientific instruments, using the Internet" (Col. 1, lines 25-28). The commands to operate such remote devices 106 are originated from client computers 102 and are processed on an intermediate machine (proxy server computer 104). The user manager 114 of the proxy server 104 may accept/deny commands and the session manager further controls user access capacities. Upon receiving authorization, the command from the user is passed to the task manager 120 of the proxy server, which proceeds to translate the commands into device-specific sub-commands. The translated commands are then stored by the task manager within a priority queue 126, the priority queue is for helping to prevent overload of commands to a slow remote device. The device server computer (second reference to 104) then polls the priority queue 126 and receives one command at a time from the proxy server 104; the commands are then passed to the remote device 106 for subsequent execution.

Thus, the Applicant submits that Edlund describes an unsecured polling operation between the proxy server and the device server. In response to the poll request, the device server pulls one command at a time from the priority queue, for transmitting the retrieved commands to the remote

device for execution in real-time. Applicant submits that the real-time environment teachings of Edlund requires unhindered communication between the proxy server computer 104 and the device server computer 104, something which would be problematic with the addition of a firewall located there-between as further discussed below.

Currently Amended Main Claims

Applicant has amended indepenent claims 1 and 3 of the present application as follows:

1. (currently amended) A secure network resource access system for facilitating access to a network ~~resource~~ printer located behind a firewall, the secure network resource access system comprising:

a proxy server located logically outside the firewall for receiving printing data from a data source located outside the firewall, the proxy server having a queue for storing the received printing data, the printing data being associated with the network printer; and

a polling server located logically behind the firewall, the polling server being configured for polling the proxy server to pull the received printing data across the firewall from the queue of the proxy server to the polling server.

3. (currently amended) A method for facilitating secure access to a network ~~resource~~ printer located behind a firewall, the method comprising the steps of:

storing received printing data in a queue of a proxy server, the received printing data from a data source located outside the firewall and being associated with the network printer; and

polling the proxy server located logically outside the firewall by a polling server located logically inside the firewall, the polling being to pull across the firewall the received printing data from the queue of the proxy server to the polling server.

Support for these amendments can be found at page 2, paragraph [0024] in the present application:

> *"The polling server 116 is in communication with the enterprise server 118, and is configured to periodically poll the proxy server 114 through the firewall to determine whether application data from a network terminal 200 is waiting in the queue of the proxy server 114. The proxy server is configured to transmit any queued application data to the polling server 116 in response to the poll signal from the polling server 116."*

and at page 2, paragraph [0022]:

> *"Typically, each network resource 104 comprises a priniting device, and in particular, an IPP-compliant printer."*

and at page 3, paragraph [0027]:

> *"...the resource type filed 304 may specify that the network resource 104 is a printer..."*

Combination Proposed by the Examiner

Based on the above discussion, Applicant provides below the combination proposed by the Examiner. In general, the Examiner has stated that "polling server being configured for polling the proxy server to pull the received data across the firewall is disclosed in Figure 1 of Grantges, other than the step of pulling the received data from the proxy server which is disclosed in Edlund".

Further, the Examiner has stated that "would have been obvious to one of ordinary skill in the art at the time the invention was made to take the teaching of Edlund related to a proxy server having therein a queue for queuing received data/request and a polling server polling the queued data at the

proxy server and have modified the teachings of Grantges related to access control of network resources in order to prevent a network resource from getting overloaded with too many commands or request data" (as disclosed in Edlund). Applicant respectfully submits that this is not quite the case in view of Applicant's comments on the lack of support in Grantges for polling operations, and therefore Applicant interprets the Examiner's proposed combination to be:

a) proxy server and gateway server networked together (Grantges);

b) firewall between the proxy server and gateway server (Grantges);

c) printing data and network printer (only inferred from Grantges and Edlund);

d) polling operations to get data between two servers (Edlund); and

e) a queue for storing the data (Edlund).

Applicant does not agree that the above proposed combination makes obvious the current claims of present application. Applicant submits that based on the above presented characterization of Grantges and Edlund, Applicant's system and method claims are patentable over the teachings of Grantges and Edlund, either taken alone or in combination, as discussed above. In specifcs: Grantges does not teach polling and therefore does not show a firewall positioned between a polling server and a proxy server; Edlund remains silent on the use of firewalls; and Grantges and Edlund combined do not teach the use of network printers and the manipulation of printing data over a network. Therefore based on the above presented arguments and discussion, Applicant submits that the currently amended claims are allowable over the cited prior art references, which do not contain any support for the motivation to combine them.

However, if the above is not convincing to the Examiner, the following demonstrates how any conceived motivation to combine the teachings of Grantges and Edlund is contrary to the teachings themselves.

Intent of Grantges and Edlund Teachings

Applicant submits Edlund is specifically directed to processing of commands for controlling remote devices and Grantges is directed to authorizing access and communication between a client computer and the authorized applications as initiated by the client computer through an application gateway server. Edlund does not teach or suggest a firewall disposed between the polling server and the proxy server, as claimed by the Applicant. Therefore, the only support to combine the teachings of Edlund and Grantges must come from the firewall taught as by Grantges.

The firewall 32 disclosed within Grantges is disposed between an insecure, public network 26 (ie. the Internet) and a secure private network (Abstract; Column 5, lines 40-43). Thus, when straightforwardly combining the teachings of the firewall of Grantges system for the Edlund system, the resulting scenario would be the firewall located between the public network 100 (Fig.1, Edlund) and the proxy server computer 104. Applicant would like to note that this firewall location as taught by Grantges is contrary to between the proxy server computer 104 and the device server computer 104 used to perform the polling operations highlighted by the Examiner.

Accordingly, Applicant believes that the proposes Grantges-Edlund combination of the Examiner is contrary to the current claims by the Applicant as the claimed firewall allows the polling server located behind the firewall to securely poll the proxy server located outside the firewall to determine whether any application printer data from a data source is waiting in the queue of the proxy server. The proxy server then submits any queued application data to the polling server in response to the poll signal from the polling server. As described on page 2, paragraph [0024] of the present application: "this mechanism allows application data to be transmitted to network resources 104 located behind a firewall, but without exposing the enterprise to the significant possibility of security breaches associated with firewall access ports." Even this is fundamentally different to meaning of the Grantges firewall, where the proxy server actively routes and forward messages through the firewall in real-time by the creation of the active two-directional ports (e.g. connections 54 and 56).

Further support for the lack of motivation to combine the firewall of Grantges with the system of Edlund can be found within Edlund on Col. 3, lines 20-25 where it states that "For example, the functions of the proxy server computer 104 and the device server computer 104 could be performed by a single server computer 104. Moreover, a client/server architecture is not required, and the present invention could be completely implemented on a single computer, such as a workstation". Thus it would be contrary to the teachings of Edlund to provide a firewall between the proxy server 104 and the device sever 104, particularly when both servers could be implemented on a single computer.

The Applicant respectfully submits that in a system for providing commands in real-time to a remote device as that described by Edlund, it would not be obvious or even desirable to provide a firewall that would be open only during the polling operation between the proxy server and the polling server as claimed by the Applicant. Such a firewall used in Edlund would in fact introduce latency and deteriorate the performance of the real-time operation desired for real-time instrument control in Edlund.

Further, the Applicant notes the Examiner's rejection of dependent claims 2, and 4-19 of the present application but considers this rejection moot in view of the above-noted amendments and the discussion of amended independent claims 1 and 3. Thus the Applicant respectfully requests favourable reconsideration of the present application.

It is believed that the above remarks and amendments submitted herein have placed this present application in condition for allowance, and a Notice thereof is requested. Further, Applicant submits that no new matter has been introduced into the subject application by the foregoing amendments. If the Examiner has further concerns, he is encouraged to contact Applicant's undersigned agent at 416-862-4318. All correspondence should continue to be directed to listed address shown below.

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Respectfully submitted,

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